In re Appln. of Robert C. Phillips, et al.
Application No. 09/750,585

CLAIM AMENDMENTS

1.   (ORIGINAL) A non-volatile data storage interface unit, for use in an
information distribution system configured to distribute information assets stored upon a non-
volatile data storage to users via a dynamic data transmission path including a cell-based
switching fabric, the interface unit comprising:

a cell transceiver connectable to a cell-based switching fabric facilitating transfer of
data cells between the non-volatile data storage interface unit and the cell-based switching
fabric, the cell transceiver comprising:

a cell transmitter coupled to an output of the non-volatile data storage interface
unit and comprising a raw data to cell data formatting circuit, and

a cell receiver coupled to an input of the non-volatile data storage interface
unit and comprising a cell data to raw data formatting circuit; and

a first non-volatile data storage controller interposed between the cell transceiver and
the non-volatile data storage, the non-volatile data storage controller comprising circuitry for:

retrieving and forwarding raw data from the non-volatile data storage to the
cell transmitter, and

receiving and storing raw data from the cell receiver to the non-volatile data
storage.

2.   (ORIGINAL) The non-volatile data storage interface unit of claim 1 further
comprising a data buffer controller coupled to the first non-volatile data storage controller,
the data buffer controller comprising an interface to random access memory for storing at
least raw data retrieved from the non-volatile data storage by the first non-volatile data
storage controller prior to transfer to the cell transmitter, thereby providing a data
transmission rate smoothing interface between the non-volatile data storage and the cell
transmitter.

3.   (ORIGINAL) The non-volatile data storage interface unit of claim 2 wherein
the data buffer controller further comprises an interface to random access memory for storing
raw data to be stored on the non-volatile data storage.

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4. (ORIGINAL) The non-volatile data storage interface unit of claim 1 wherein the cell-based switching fabric is an ATM switching fabric.

5. (ORIGINAL) The non-volatile data storage interface unit of claim 1 wherein the cell-based switching fabric is a connection-oriented fabric.

6. (ORIGINAL) The non-volatile data storage interface unit of claim 1 wherein the cell transmitter is coupled to a plurality of non-volatile data storage controllers, including the first non-volatile data storage controller.

7. (ORIGINAL) The non-volatile data storage interface unit of claim 1 wherein the cell transmitter comprises circuitry for generating a header for a cell comprising raw data retrieved from the non-volatile data storage.

8. (ORIGINAL) The non-volatile data storage interface unit of claim 7 wherein the circuitry for generating a header includes a CRC generator.

9. (ORIGINAL) The non-volatile data storage interface unit of claim 8 wherein the circuitry for generating a header includes an HEC generator.

10. (ORIGINAL) The non-volatile data storage interface unit of claim 1 wherein the cell receiver comprises circuitry for processing a header for a cell received from the cell-based switching fabric.

11. (ORIGINAL) The non-volatile data storage interface unit of claim 10 wherein the circuitry for processing a header includes a CRC accumulator.

12. (ORIGINAL) The non-volatile data storage interface unit of claim 11 wherein the circuitry for processing a header includes an HEC accumulator.

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13.   (ORIGINAL) A method for transmitting data within an information distribution system configured to distribute information assets stored upon a non-volatile data storage to users via a dynamic data transmission path including a cell-based switching fabric, the method comprising, in any order, the steps of:

receiving, by a cell receiver, a data storage asset read command from the cell-based switching fabric;

passing, by the cell receiver to a non-volatile data storage controller, the data storage asset read command;

retrieving, from a non-volatile data storage controlled by the non-volatile data storage controller, raw data corresponding to the data storage asset read command;

first transmitting the raw data to a cell transmitter circuit;

packaging, by the cell transmitter circuit, the raw data within cells for transmission on the cell-based switching fabric; and

second transmitting, by the cell transmitter circuit, the cells to the cell-based switching fabric.

14.   (ORIGINAL) The method of claim 13 further comprising the step of:

storing, within a memory buffer prior to the first transmitting step, at least the raw data retrieved from the non-volatile data storage by the non-volatile data storage controller prior to transfer to the cell transmitter, thereby providing a data transmission rate smoothing interface between the non-volatile data storage and the cell transmitter.

15.   (ORIGINAL) The method of claim 13 wherein the second transmitting step comprises transmitting the cells to an ATM switching fabric.

16.   (ORIGINAL) The method of claim 13 wherein the cell-based switching fabric is a connection-oriented fabric.

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17. (ORIGINAL) The method of claim 13 wherein the packaging step comprises generating, by circuitry within the cell transmitter circuit, a header for a cell comprising raw data retrieved from the non-volatile data storage.

18. (ORIGINAL) The method of claim 17 wherein the generating a header step includes generating a CRC value for a cell.

19. (ORIGINAL) The method of claim 18 wherein the generating a header step includes generating an HEC value for a cell.

20. (ORIGINAL) A method for receiving data within an information distribution system configured to communicate information assets from a non-volatile data storage to users via a dynamic data transmission path including a cell-based switching fabric, the method comprising, in any order, the steps of:

receiving, by a cell receiver connected to the cell-based switching fabric, a data storage asset write command from the cell-based switching fabric;

passing, by the cell receiver to a non-volatile data storage controller connected to the cell receiver, the data storage asset write command;

receiving, by the cell receiver, data cells specifying a hard disk address and raw data;

extracting, by the cell receiver, the raw data from the data cells;

transmitting, by the cell receiver, the raw data to the non-volatile data storage controller; and

storing, by the non-volatile data storage controller connected to the non-volatile data storage, the raw data to the non-volatile data storage.

21. (ORIGINAL) The method of claim 20 further comprising the step of:

first processing, by the cell receiver, a header for a cell received from the cell-based switching fabric.

22. (ORIGINAL) The method of claim 21 wherein the first processing step comprises processing header data by a CRC accumulator.

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23.   (ORIGINAL) The method of claim 22 wherein the first processing step
comprises processing header data by an HEC accumulator.

24.   (ORIGINAL) The method of claim 20 further comprising the step of:
buffering, by the non-volatile data storage controller, the raw data from the data cells
prior to the storing step.

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